REMARKS/ARGUMENTS

Claims 1-6, 14-16, 19-21 and 63 have been amended. Claims 1-23 and 63 are pending in the application, with claims 1, 14, 19 and 63 being independent claims. Applicants respectfully request reconsideration.

Claim 1 has also been amended to recite that the spatial processing randomizes a plurality of effective single-input single-output (SISO) channels observed across the plurality of subbands. Support for this amendment can be found, for example, in paragraph [0043] of the application. Independent claims 14, 19 and 63 have been similarly amended.

Provisional Double Patenting

Claims 1-23 and 63 were provisionally rejected under 35 U.S.C. § 101 as claiming the same invention as that of claims 1-8, 10-24 and 65 of copending Application No. 10/794,918.

In an Amendment filed for copending Application No. 10/794,918, independent claims 1, 15, 20 and 65 of copending Application No. 10/794,918 have been amended to process "a protocol data unit (PDU)." Therefore, Applicants submit that claims 1-23 and 63 differ from claims 1-8, 10-24 and 65 of copending Application No. 10/794,918, and respectfully request that the provisional double-patenting rejection be withdrawn. Moreover, the present rejection is premature since no claims have been allowed in either application

Claim Rejections – 35 USC § 112

Claim 63 was rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description. The Examiner contended that the claim term "software storage apparatus" is not supported by the specification.

While Applicants disagree with this rejection, claim 63 has been amended to recite "a memory unit," as suggested by the Examiner, to expedite prosecution of the current application. Therefore, Applicants respectfully request that the rejection under 35 U.S.C. § 112, second paragraph, be withdrawn.

Claim 8 was rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claims the subject matter which applicant regards as the invention. The Examiner contended that the language "performed only on data symbols" in claim 8 contradicts claim 1 from which claim 8 depends.

Claim 1 has been amended to recite "performing spatially processing on <u>at least one of</u> the pilot and data symbols." Emphasis added. Thus, claim 1, as amended, encompasses the situation where the spatial processing is only performed on the data symbols as claimed in claim 8. Therefore, Applicants respectfully request that the rejection under 35 U.S.C. § 112, second paragraph, be withdrawn.

Claim Rejections – 35 USC § 102

Claims 1, 5, 14, 16, 19, 21 and 63 were rejected under 35 U.S.C. § 102(e) as being anticipated by Trikkonen (U.S. 2004/0002364) (hereinafter "Trikkonen").

Claim 1 is directed to a method of transmitting data from a transmitting entity to a receiving entity in a wireless multi-antenna communication system utilizing orthogonal frequency division multiplexing (OFDM). Among its many features, the method of claim 1 performs spatial processing on at least one of the pilot and data symbols for each subband with at least one steering vector selected for the subband, the spatial processing randomizing a plurality of effective single-input single-output (SISO) channels observed across the plurality of subbands.

Thus, the method of claim 1 spatially processes at least one of the pilot and data symbols for each subband and randomizes a plurality of effective SISO channels observed across the plurality of subbands having the pilot and data symbols. This feature allows a receiving entity to receive pilot and data symbols on the plurality of subbands using a signal antenna, while enjoying the benefits of transmit diversity provided by the transmitting entity. The transmit diversity improves the reliability of transmissions to the receiving entity.

Trikkonen does not teach or suggest at least the above feature of claim 1. Trikkonen discloses a multi-antenna wireless system that randomizes an <u>unused portion</u> of its transmit resources, in which extra transmit antennas are used to construct pseudorandomized beams. *See* paragraphs [0134] and [0135] of Trikkonen. Thus, instead of spatially processing at least one of the pilot and data symbols for each subband and randomizing a plurality of effective SISO channels observed across the plurality of subbands having the pilot and data symbols, the system of Trikkonen randomizes additional beams that are transmitted using unused transmit resources of the system.

For at least the reasons given above, Applicants submit that claim 1 is allowable, and respectfully request that the rejection of claim 1 be withdrawn.

Each of independent claims 14, 19 and 63 includes features substantially similar to those of claim 1, and are therefore also allowable for at least the reasons given above.

Claims 5, 16 and 21 depend from claims 1, 14 and 19, respectively, and are therefore also allowable for at least the reasons given above.

Claim Rejections – 35 USC § 103

Claims 2, 3, 7, 15, 17, 20 and 22 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Trikkonen in view of Ketchum (US 2003/0108117). Claim 4 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Trikkonen in view of Ketchum as applied to claim 2, and further in view of Honig (US 6,956,897). Claims 6, 10 and 12 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Trikkonen in view of Walton (US 2003/0235147). Claims 8 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Trikkonen in view of Jasper (US 6,441,786). Claim 9 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Trikkonen in view of Shattil (US 2004/0086027). Claim 11 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Trikkonen in view of Walton as applied to claim 11, and further in view of Hudson (US 6,477,161). Claims 13, 18 and 23 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Trikkonen in view of Lewis (US 2004/0102157).

None of the above cited references are seen to teach or suggest at least the feature of claim 1 of performing spatial processing on at least one of the pilot and data symbols for each subband with at least one steering vector selected for the subband, the spatial processing randomizing a plurality of effective single-input single-output (SISO) channels observed across the plurality of subbands. Therefore, none of the other cited are seen to remedy the same deficiencies in Trikkonen.

Claims 1-4, 6-13, 15, 17, 18, 20, 22 and 23 depend from independent claims 1, 14 or 19, each of which substantially includes at least the above feature. Therefore, Applicants submit that claims 1-4, 6-13, 15, 17, 18, 20, 22 and 23 are also allowable for at least the reasons given above.

CONCLUSION

Therefore, for at least the reasons presented above with respect to all of the pending claims subsequent to entry of this response, Applicants assert that all claims are patentably distinct from all of the art of record. All objections and rejections having been addressed, it is respectfully submitted that this application is in condition for allowance and a Notice to that effect is earnestly solicited. If any points remain in issue that the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Charge Statement: For this application, the Commissioner is hereby authorized to charge any required fees or credit any overpayment to Deposit Account 17-0026.

Respectfully submitted,
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